



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,170	02/01/2002	Tse Wai-Choi Eric	109312.	9703

7590 10/04/2007
Henry N Wixon
Hale & Dorr
Suite 1000
1455 Pennsylvania Avenue NW
Washington, DC 20004

EXAMINER

GABEL, GAILENE

ART UNIT	PAPER NUMBER
----------	--------------

1641

MAIL DATE	DELIVERY MODE
-----------	---------------

10/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/936,170

Applicant(s)

ERIC ET AL.

Examiner

Gailene R. Gabel

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2007 and 19 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-18 is/are pending in the application.
4a) Of the above claim(s) 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,4,5 and 7-18 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment Entry

1. Applicant's amendment and response filed on March 21, 2007 and July 19, 2007, are acknowledged and have been entered. Claims 1, 4, 5, and 7-9 have been amended. Claims 2, 3, and 6 have been cancelled. Claim 18 remains withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Accordingly, claims 1, 4, 5, and 7-18 are pending. Claims 1, 4, 5, and 7-17 are under examination.

Withdrawn Rejections

2. All rejections and objections not reiterated herein, have been withdrawn.
3. The rejections of claims 2, 3, and 6 are now moot in light of Applicant's cancellation of the claims.
4. In light of Applicant's amendment, canceling the term, "unknown" in the claims, the rejection of claims 1, 4, 5, and 7-17 under 35 U.S.C. 112, first paragraph, as containing new matter, is hereby, withdrawn.
5. In light of Applicant's amendment, the rejection of claims 1, 4, 5, and 7-17 under 35 U.S.C. 112, second paragraph, is hereby, withdrawn.

Maintained Rejections

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4, 5, and 7-17 stand rejected under 35 U.S.C. 102(b) as being anticipated by Gargano et al. (From Phage Libraries to Intracellular Immunization, Intracellular Antibodies: Development and Applications (1997) Chapter 10, pages 174-186)).

Gargano et al. teach determining efficient binding between intracellular immunoglobulins (scFv) expressed in a yeast two hybrid format and corresponding target antigens in an intracellular environment (yeast cells), and isolating immunoglobulins which bind successfully (see page 176, second full paragraph, and Figure 10.1). Gargano et al. provide an interaction trap (two hybrid system) having a first molecule and a second molecule in a modular domain structure as in eukaryotic transcription factors: transcriptional activation domain and a DNA-binding domain, which exist as separable domains, but associate to form an active reporter molecule (construct). Activation of the reporter construct occurs when the two domains, expressed as activation domain (VP16) and DNA-binding domain (LexA), are brought together through binding interaction of two fusion polypeptides that undergo binding interaction in an assay, leading to generation of a signal that can be monitored by change in optical property (colorimetric assay). The two fusion polypeptides are an scFv fragment fused to each of the VP16 activation domain and a target antigen fused

Art Unit: 1641

to LexA DNA-binding domain. According to Gargano et al., the level of reporter activation correlates well with specific binding of proteins which further gives an indication of the strength of the interaction (see page 174, fourth full paragraph to page 176, first full paragraph). The active reporter molecule may be an enzyme and the method is performed in the presence of a substrate (see page 177, first full paragraph and Figure 10.1 (D)). The immunoglobulins are provided by immunoglobulin-encoding nucleic acids within mammalian cells, from phage libraries encoding a repertoire of immunoglobulins (see page 177, second to fourth full paragraphs). The libraries can be constructed from nucleic acids isolated from an organism which has been challenged by antigen (see page 180, first and second full paragraph). Gargano et al. teach selecting immunoglobulins and further subjecting them to functional intracellular assay (see Figure 10.2). Cells can be sorted (rescued) on the basis of phenotype conferred by the intracellular immunoglobulins.

New Grounds of Rejection

New Matter

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1, 4, 5, and 7-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably

Art Unit: 1641

convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

In this case, the specification does not appear to provide literal or descriptive support for the recitation of "wherein said immunoglobulin was subjected to no more than one preselection step" as recited in amended claim 1. Applicant points to Examples 4 and 5 for support of the recitation, wherein it is stated that "a selection is carried out using ..." and "The phage are subject to one round of selection", respectively; however, the recitation of "no more than one preselection step" that delimits the number of preselection steps to only one, is not literally supported or adequately described. This rejection is based on lack of written description for the recitation of a negative limitation in the claims but the specification only discloses an example at which the phage was subjected to one round of selection step, and does not provide teaching or disclosure which excludes more selection steps. Specific guidance for the exclusion of "more than one preselection steps" is not taught, and the phrase does not necessarily flow from the specification. Furthermore, none of the originally filed claims recite the limitation in question. Recitation of claim limitations lacking literal or adequate descriptive support in the specification or originally filed claims is considered to encompass new matter. See *In re ANDERSON*, 176 USPQ 331 (CCPA 1973).

Response to Arguments

8. Applicant's arguments filed on July 27, 2007 have been fully considered but they are not persuasive.

A) Applicant argues that the claims are not anticipated by Gargano et al. because Gargano teach that several preselection steps are required; whereas the instant application discloses "screening of entire antibody libraries, such as phage libraries, without prior application of phage display to isolate the antibodies which bind the desired antigen." Applicant then contends that Gargano et al. does not teach each and every element of the claimed invention.

Contrary to Applicant's argument, Gargano et al. does not appear to specifically require several preselection steps. Gargano et al. literally and specifically provides, "the need of a preselection step such as an affinity purification on an antigen column" in page 185, first full paragraph, as claimed. Accordingly, claim 1 does not exclude the teaching of Gargano et al.

In as far as Applicant's disclosure of "screening of entire antibody libraries, such as phage libraries, without prior application of phage display to isolate the antibodies which bind the desired antigen" which Applicant contends is a failed teaching by Gargano et al., it is deemed that such feature is not recited in the rejected claims. Claim 1 merely recites a method of determining binding of a first fusion protein comprising an immunoglobulin ... and a second fusion protein comprising a target... in an intracellular environment, and is not drawn to a screening method for entire unknown antibody libraries. Although the claims are interpreted in light of the specification,

Art Unit: 1641

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. No claims are allowed.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gailene R. Gabel whose telephone number is (571) 272-0820. The examiner can normally be reached on Monday, Tuesday, and Thursday, 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gailene R. Gabel
Primary Examiner
Art Unit 1641



September 28, 2007